UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,788	04/14/2004	Atsushi Yamada	67336-019	4666

20277 7590 12/02/2005

MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER	
BARRY, CHESTER T	

ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/823,788	YAMADA ET AL.	
	Examiner	Art Unit	
	Chester T. Barry	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☒ Claim(s) *5-16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/10/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Objection is made to Claims 5 – 16 under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim may not depend from a multiple dependent claim, i.e., claim 4. See MPEP § 608.01(n). Accordingly, the claims 5-16 have not been further treated on the merits.

Claims 1, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 184 431 to Davies in view of U.S. Pat. Pub. 20030217919, USP 5916444 to Leech, USP 6372472 to Nehls, and USP 3864473.

GB 2 184 431 to Davies describes a method for treating swimming pool water containing organic matter, i.e., a human bather. Davies also describes periodic monitoring of the pH of swimming pool water by immersing a pH meter into the water. As shown by U.S. Pat. Pub. 20030217919, it is well known that pH meters operate on electrochemical principles using a pair of electrochemical electrodes. Measuring the pH of water with a pH meter, therefore, subjects the water to an electrochemical technique. The reference does not appear to describe a nitrogen compound in the water, but does refer to "alkaline substances produced by people using the water." The skilled artisan would have understood these "alkaline substances produced by people using the water" to have included various nitrogen compounds, such as urine and sweat, as shown by USP 5916444 to Leech, who writes:

> Swimming pool owners continually fight a battle against algae and other water contaminants. The swimming pool offers algae a unique environment where water, pollutants, contaminants, chemicals and nutrients are deposited and collected. Nitrogen rich compounds and other nutrients are constantly added to

> the swimming pool from sources such as fill water, rain water, urine and sweat from swimmers, and decaying leaves and grass clippings. In addition, nutrients may be added directly from lawn and garden fertilizers which may enter the pool from overspray, wind, or surface runoff. Evaporation serves to concentrate these nutrients.

In the alternative, the Davies pool water inherently contains various nitrogen rich compounds, as shown by Leech.

Davies does not appear to describe a biochemical treatment step performed after the electrochemical treatment step.

USP 6372472 to Nehls describes a method for treating swimming pool water containing organic matter, i.e., a human sun tanning oil-bearing human bather. A portion of the oil washes off the skin of the bather into the swimming pool and floats therein. The method involves a treatment step of biochemically treating the water by passing the oil-laden water through a filter containing immobilized lipase, an enzyme derived from bacteria optionally obtained using recombinant DNA biotechnology. It is not clear whether the sun tanning oil comprises a nitrogen-bearing compound.

USP 3864473 describes a sun tanning composition useful in mitigating sun burn and resistant to washing off in water. That composition comprises poly(para-dialkylaminobenzoyl)ethylenimine which contains nitrogen in at least the amino group and the imine group. It would have been obvious for the bather in the Davies pool to

have selected this nitrogen-bearing sun screen lotion in order to effect longlasting protection to erythema-causing rays as taught by the reference.

It would have been obvious to have placed the pH meter at a location that was either upstream or downstream of the immobilized lipase filter. Accordingly, it would have been obvious to subjected the water to the biological (lipase) treatment either after or before the electrochemical (pH sensing) treatment step.

USP 5916444 to Leech suggests denitrification of swimming pool water using microbes. It would have been obvious to have subjected the swimming pool water of Davies to microbial denitrification, as suggested by Leech.

Claims 2 – 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6372472 to Nehls, and US 20030141202 A1.

USP 6372472 to Nehls describes a method for treating swimming pool water containing organic matter, i.e., a human sun tanning oil-bearing human bather. A portion of the oil washes off the skin of the bather into the swimming pool and floats therein. The method involves a treatment step of biochemically treating the water by passing the oil-laden water through a filter containing immobilized lipase, an enzyme derived from bacteria optionally obtained using recombinant DNA biotechnology.

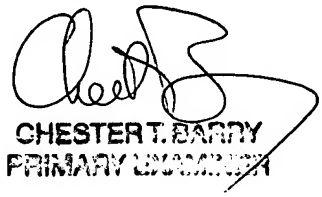
US 20030141202 A1 describes electrolytic treatment of pool water ([0002]). It would have been obvious to have treated the pool water of the Nehls swimming pool to the '202 electrolytic water treatment in order to disinfect it.

Claims 1 – 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Per claims 1 – 3, "for-treatment water" and "an organic matter" cannot be understood. Deletion of "for-treatment" and "an," respectively, is suggested.

Examiner Comment

Any printed publication published before 4/16/03 by anyone anywhere describing a nitrogen treating method and system for a nitrogen compound, which can treat the nitrogen compound efficiently and which can reduce the size and cost of an apparatus, such as a method in which a nitrogen compound in for-treatment water is treated according to an electrochemical technique, a cathode reaction region and an anode reaction region defined by a cation exchange membrane interposed between a cathode and an anode, wherein the for-treatment water treated in the cathode reaction region according to the electrochemical technique is treated with hypohalogenous acid, or, ozone or active oxygen according to a chemical technique, would be deemed highly material to prosecution of this application. Such disclosure, if cited by the examiner or

applicants, would be especially material in combination with USP 6083377, for example.



571-272-1152